

**Claims:**

What is claimed is:

1. A data-storage device comprising:  
a storage medium;  
nanometer-scaled data storage areas in the storage medium;  
an energy-emitting tip positioned in close proximity to the storage medium;  
a fluid medium positioned between the energy-emitting tip and the storage medium; and  
particles contained in the fluid medium.
2. The data-storage device of claim 1, wherein the energy-emitting tip emits electrons.
3. The data-storage device of claim 1, wherein the energy-emitting tip emits thermal energy.
4. The data-storage device of claim 1, wherein the fluid medium comprises a ferrofluid.
5. The data-storage device of claim 1, wherein the fluid medium comprises a high-dielectric fluid.
6. The data-storage device of claim 1, wherein the particles comprise a material chosen from the group consisting of electrically conducting, dielectric and paraelectric materials.
7. The data-storage device of claim 1, wherein the particles comprise a magnetic material.
8. The data-storage device of claim 1, wherein the particles form a bridge between the tip and the storage medium.
9. A data-storage device comprising:  
a storage medium;

nanometer-scaled storage areas in the storage medium;  
an energy-emitting tip positioned in close proximity to the storage medium;  
and  
molecules positioned between the energy-emitting tip and the storage medium.

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10. The data-storage device of claim 9, wherein the energy-emitting tip emits electrons.

10 11. The data-storage device of claim 9, wherein the energy-emitting tip emits thermal energy.

12. The data-storage device of claim 9, wherein the molecules comprise one-dimensional conductor molecules.

15 13. The data-storage device of claim 12, wherein the one-dimensional conductor molecules comprise at least one type of molecule chosen from the group consisting of diols, polymers, surfactants, nanotubes and polymers.

20 14. The data-storage device of claim 9, wherein the conductive molecules comprise molecules attached to the storage medium.

25 15. A method of data storage comprising:  
providing a storage medium comprising nanometer-scaled data storage area;  
positioning an energy-emitting tip in close proximity to the storage medium;  
guiding energy emitted from the energy-emitting tip to the storage area;  
altering a state of the storage areas with the emitted, guided energy.

30 16. The method of claim 15, wherein the guiding step comprises channeling the energy emitted through conductor molecules positioned between the storage medium and the energy-emitting tip.

17. The method of claim 16, wherein the guiding step comprises using conductor molecules that comprise one-dimensional conductor molecules.

18. The method of claim 15, wherein the guiding step comprises channeling the energy emitted through particles in a fluid medium between the storage medium and the energy-emitting tip.

5 19. The method of claim 18, wherein the guiding step comprises using particles that form a bridge between the storage medium and the energy-emitting tip.

20. The method of claim 18, wherein the guiding step comprises that the fluid medium comprises a ferrofluid.

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